

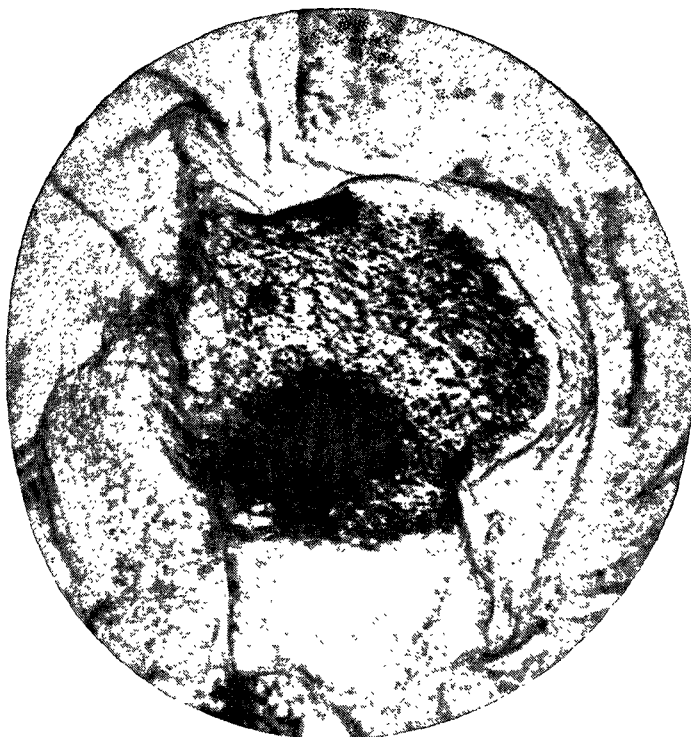
THE ELECTROLYTIC TRANSMISSION OF SULPHUR FROM THE HARROGATE SULPHUR WATER THROUGH A PIG'S SKIN, AND ITS THERAPEUTIC VALUE ON THE HUMAN SUB- JECT UNDER SIMILAR CIRCUMSTANCES IN ECZEMA, GOUT, &c.

By FRANCIS WILLIAM SMITH, M.D. ABERD.

In a paper by me published in the *British Medical Journal* of Feb. 16th, 1901, I proved that patients could be covered with nascent sulphur in a bath of Harrogate sulphur water by passing a constant current of electricity through it. This was confirmed by Professor Smithells, F.R.S. (Professor of Chemistry in the Yorkshire College, Leeds). I also stated that treatment of cases of eczema, gout, rheumatism, and peripheral neuritis did better by this method than by the patients simply lying in the bath of Harrogate sulphur water for so many minutes. I likewise said that I "believe nascent sulphur was driven through the patient's skin into the circulation." I have now proved that it must be so. Mr. Mark Woodhouse, the assistant electrical bathman at the Royal Baths, Harrogate, had been able to drive sulphur through three folds of blotting-paper by electricity. It suggested itself to my mind to try to do the same through a pig's skin.

A piece of pig's skin was tied round the mouth of an open-mouthed vessel the bottom of which had been previously knocked out. A piece of blotting-paper was placed outside the skin external to the vessel, and the positive end of an anode was placed on the blotting-paper. The vessel was

FIG. 1.



Sulphur deposited on a pig's skin by electricity from the Harrogate sulphur water.

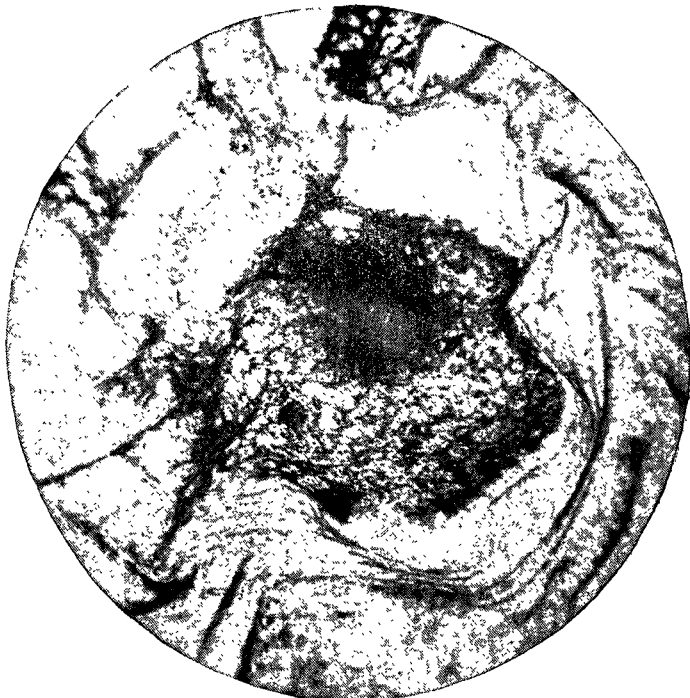
then filled from the bottom with Harrogate sulphur water and the negative anode was put into it. Three milliampères from a 13-celled battery (constant current) were turned on for half an hour. The result was that nascent sulphur was deposited on the pig's skin, driven right through it, and on to the blotting-paper at the positive pole.

The three illustrations demonstrate what I mean. They are reproduced from photographs taken the next day, when the pig's skin was dry. The first two (Fig. 1 and Fig. 2) lost their round shape as tied round the neck of the vessel. This is from the puckering of the skin in drying. The reproduction on the blotting-paper (Fig. 3) shows the exact size

and shape, because the blotting-paper did not alter in drying.

And now as to the therapeutic value of this discovery on the human being whose body is subjected to the same electrical treatment, in the same kind of sulphur water bath,

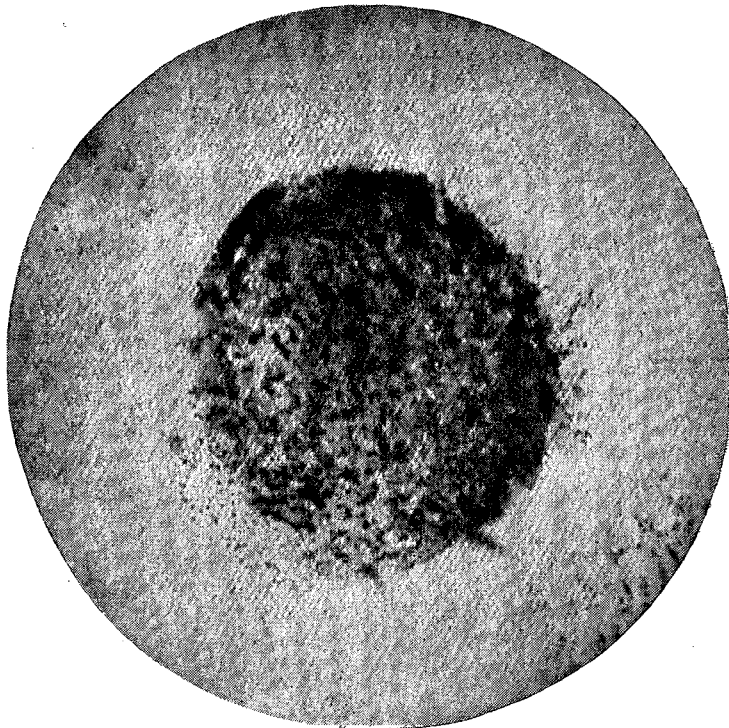
FIG. 2.



Sulphur driven through a pig's skin by electricity from the Harrogate sulphur water.

with the constant current. I consider that patients suffering from eczema do much better by treatment by this method than by simply lying in the sulphur bath. During the last two months I have had good proof of this, as the patients themselves and the attendants at the Royal Baths know. I will not occupy valuable space with cases, but such are the facts. Many cases of long standing which had derived no benefit by the old simple sulphur bath yielded to treatment.

FIG. 3.



Sulphur driven on to a piece of blotting-paper, having been driven through a pig's skin by electricity.

Of course, driving sulphur through a dead skin must be a very different thing from sending it through a living one where all the vessels and nerves are alive and active. I hope, therefore, that this simple discovery may be of benefit to those who suffer from eczema (especially gouty eczema), gout, rheumatism, and peripheral neuritis.

Harrogate.